

# **EXHIBIT 12**

## **Unredacted**



APPEARANCES (CONTINUED)

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TIMOTHY SCHMIDT  
TONI BAKER  
NORA PUCKETT

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1 SAN JOSE, CALIFORNIA

APRIL 21, 2022

2 P R O C E E D I N G S

3 (PROCEEDINGS CONVENED AT 10:26 A.M.)

4 THE COURT: GOOD MORNING, EVERYONE. WELCOME TO THE  
5 10:00 O'CLOCK HEARING, MORE OR LESS. SO PLEASE BE SEATED.

6 THANK YOU FOR YOUR PATIENCE WHILE WE GOT THE TECHNOLOGY UP  
7 AND RUNNING.

8 MS. FANTHORPE, IF YOU'LL CALL THE MATTER, WE'LL GET  
9 UNDERWAY.

10 THE CLERK: CALLING CASE 20-CV-3664, BROWN, ET AL,  
11 VERSUS GOOGLE, LLC, ET AL.

12 COUNSEL, PLEASE IDENTIFY YOURSELVES FOR THE RECORD,  
13 BEGINNING WITH PLAINTIFF.

14 MR. MAO: GOOD MORNING, YOUR HONOR.

15 THIS IS MR. MAO.

16 I WANTED TO INTRODUCE MR. BOIES.

17 MR. BOIES: GOOD MORNING, YOUR HONOR.

18 MR. MAO: WE ALSO HAVE SOMEONE NEW TO OUR FIRM. THIS  
19 IS ALISON ANDERSON FROM THE DEPARTMENT OF JUSTICE.

20 MS. ANDERSON: GOOD MORNING, YOUR HONOR.

21 MR. MAO: MR. YANCHUNIS, WHO YOU OBVIOUSLY HAD APPEAR  
22 BEFORE YOU BEFORE.

23 AND MR. MCGEE FROM MORGAN & MORGAN AS WELL, AND THE FIVE  
24 OF US WILL BE CONDUCTING THE HEARING.

25 THE COURT: EXCELLENT. THANK YOU. GOOD MORNING.

1 AND THANK YOU ALL FOR GETTING HERE IN PERSON. I APPRECIATE IT.

2 AND FOR THE DEFENDANTS TODAY?

3 MR. SCHAPIRO: HELLO, YOUR HONOR.

4 I'M ANDREW SCHAPIRO FROM QUINN, EMANUEL FOR GOOGLE.

5 I'M JOINED BY MY COLLEAGUE, VIOLA TREBICKA.

6 MS. TREBICKA: GOOD MORNING, YOUR HONOR.

7 MR. SCHAPIRO: AND JOSEF ANSORGE.

8 MR. ANSORGE: GOOD MORNING, YOUR HONOR.

9 MR. SCHAPIRO: WE'RE THE THREE WHO WILL BE PRESENTING  
10 OR ADDRESSING THE COURT OR THE WITNESS TODAY.

11 WE ALSO HAVE OUR TRUSTED ASSOCIATE, SETH FORTENBERY, WHO  
12 WILL BE RUNNING THE SHOW HERE TODAY.

13 THE COURT: EXCELLENT.

14 MR. SCHAPIRO: AND PRESENT WITH US IN THE AUDIENCE WE  
15 HAVE TWO ATTORNEYS FROM GOOGLE. WE HAVE TONI BAKER, WHO IS  
16 ASSOCIATE DISCOVERY COUNSEL.

17 THE COURT: GOOD MORNING.

18 MR. SCHAPIRO: AND WE HAVE NORA PUCKETT, WHO IS  
19 DIRECTOR OF LITIGATION.

20 THE COURT: GOOD MORNING. THANK YOU FOR BEING HERE.

21 ALL RIGHT. WE ALSO HAVE THE SPECIAL MASTER,  
22 DOUGLAS BRUSH, AND MR. SCHMIDT, WHO'S A MEMBER OF HIS TEAM.  
23 THEY'VE BEEN VERY INVOLVED IN THE PROCEEDINGS IN THIS MATTER  
24 AND ARE JOINING US IN PERSON TODAY.

25 THANK YOU FOR MAKING THAT EFFORT.

1 IT IS GOOD TO SEE EVERYONE. IT'S GOOD TO HAVE EVERYBODY  
2 IN PERSON IN COURT, SO THANK YOU ALL FOR THAT EFFORT.

3 WE ARE WEARING MASKS TODAY. WE WILL PROCEED WITH CAUTION.

4 AND WHEN WE HAVE A WITNESS ON THE STAND -- OH, THEY  
5 ADJUSTED MY MONITOR. THAT'S NOT GOING TO WORK, IS IT?

6 BUT WHEN WE HAVE A WITNESS ON THE STAND, I MAY ASK THE  
7 WITNESS AND THE SPEAKER TO TAKE OFF THEIR MASKS SO THAT THE  
8 COURT REPORTER CAN HEAR AND BE SURE THAT OUR RECORD IS  
9 COMPLETE.

10 ALL RIGHT. WE ARE ON TODAY FOR A PROCEEDING THAT FOLLOWS  
11 PLAINTIFFS' MOTION FOR DISCOVERY SANCTIONS, AND I HAVE HAD SOME  
12 CONVERSATIONS WITH COUNSEL AS TO HOW WE WILL PROCEED.

13 AND WHAT WE WILL DO IS I WILL FIRST HEAR A SHORT, BRIEF  
14 OPENING POSITION STATEMENT FROM EACH SIDE; AND THEN WE WILL  
15 PROCEED FIRST IN HEARING MODE ON THE MOTION WITH A --  
16 PLAINTIFFS WILL MOVE THROUGH AND MAKE THEIR POINTS AND THEN,  
17 WHEN APPROPRIATE, CALL A WITNESS. I UNDERSTAND THERE'S ONE  
18 WITNESS ON THE PLAINTIFFS' SIDE.

19 AND I HAVE RECEIVED LOTS AND LOTS OF EXHIBITS FROM ALL THE  
20 PARTIES, SO TO THE EXTENT THAT THERE ARE ADDITIONAL DOCUMENTS  
21 THAT ARE NOT ALREADY IN THE RECORD BEFORE THE COURT THAT A  
22 PARTY WANTS TO MOVE INTO EVIDENCE IN THESE PROCEEDINGS, WE'LL  
23 HANDLE THAT.

24 ALL RIGHT. SO WITHOUT FURTHER DELAY OR ADO, MR. BOIES,  
25 LET'S START WITH PLAINTIFF.



1 MR. BOIES: THANK YOU, YOUR HONOR.

2 MAY IT PLEASE THE COURT.

3 WHAT I'LL TRY TO DO IS BRIEFLY SUMMARIZE SEVEN KEY POINTS  
4 THAT I THINK MAY BE HELPFUL TO THE COURT IN FRAMING THE  
5 PRESENTATION THAT WE'RE GOING TO GIVE TODAY.

6 FIRST -- AND I DON'T THINK THIS SHOULD BE IN DISPUTE --  
7 DATA AND DOCUMENTS CONCERNING INCOGNITO USE AND USERS ARE  
8 RELEVANT. THEY'RE RELEVANT TO DAMAGES, FOR EXAMPLE, THE EXTENT  
9 OF THE USE; THEY'RE RELEVANT TO LIABILITY, THE TYPE AND NATURE  
10 OF USE; AND ACCORDING TO GOOGLE, THEY'RE RELEVANT TO CLASS  
11 CERTIFICATION.

12 THE COURT IS WELL AWARE, I THINK, OF PLAINTIFFS' REPEATED,  
13 AND I MIGHT SAY URGENT, EFFORTS TO OBTAIN DOCUMENTS AND DATA  
14 CONCERNING INCOGNITO USE AND USERS.

15 SECOND, I DON'T KNOW IF WE -- IF THESE ARE BEING DISPLAYED  
16 OR NOT, THEY'RE NOT COMING UP ON THE MONITOR HERE.

17 THE CLERK: YOU WOULD NEED TO TELL ME. WHAT DID YOU  
18 WANT DISPLAYED? PLAINTIFFS'?

19 MR. BOIES: MAY I HAVE JUST A MOMENT, YOUR HONOR?

20 THE COURT: YES.

21 THE CLERK: IS IT PLAINTIFFS' SIDE?

22 MR. MAO: YES, PLAINTIFFS' SIDE.

23 THE CLERK: I JUST HAVE TO DO A LITTLE TOGGLE, SO I  
24 JUST NEED TO KNOW.

25 MR. BOIES: THANK YOU.

1 SECOND, IN ORDER TO TRACK AND ANALYZE INCOGNITO BROWSING,  
2 GOOGLE DEVELOPED INCOGNITO DETECTION SIGNALS. THESE SIGNALS  
3 WERE ONE BIT FIELDS THAT WERE TURNED ON AND OFF BASED ON  
4 WHETHER THE INCOGNITO MODE WAS BEING USED.

5 THESE SIGNALS INCLUDE IS\_CHROME\_INCOGNITO,  
6 MAYBE\_CHROME\_INCOGNITO, AND IS\_CHROME\_NON\_INCOGNITO.

7 GOOGLE STILL -- AND I WANT TO EMPHASIZE THIS, YOUR  
8 HONOR -- STILL HAS NOT DISCLOSED WHETHER THERE ARE OTHER FIELDS  
9 THAT ARE USED TO LOG INCOGNITO USE.

10 THIRD, INCOGNITO DETECTION BITS DIRECTLY CONCERN  
11 INCOGNITO'S USE AND USERS.

12 FIRST, WITH RESPECT TO THAT, GOOGLE ITSELF DESCRIBES THE  
13 IS\_CHROME\_INCOGNITO SIGNAL AS REPRESENTING IF AN ENTRY COMES  
14 FROM A CHROME WEB BROWSER IN INCOGNITO MODE.

15 GOOGLE ITSELF DESCRIBES THE MAYBE\_CHROME\_INCOGNITO SIGNAL  
16 AS ACCURATELY TRACKING INCOGNITO USAGE.

17 AND LATER TODAY, WE'LL REFER TO SOME DOCUMENTS, INTERNAL  
18 GOOGLE DOCUMENTS THAT TRACK AND ANALYZE AND DECIDE THAT THE  
19 INCOGNITO TRACKING IS ACCURATE.

20 NOW, THESE SIGNALS AND GOOGLE'S USE OF THEM ARE RELEVANT  
21 TO THE USE AND USERS OF INCOGNITO.

22 HOW ACCURATE THEY ARE AND EXACTLY HOW THEY ARE USED AT  
23 GOOGLE MAY BE SUBJECT TO DISPUTE. WE MAY BE DEBATING THAT  
24 TODAY.

25 BUT REGARDLESS OF HOW ACCURATE OR INACCURATE GOOGLE CLAIMS

1 THE COURT: YOU MAY HAVE ONE MORE QUESTION.

2 MR. BOIES: I'LL PASS. THANK YOU.

3 THE COURT: OKAY. ALL RIGHT. THANK YOU.

4 THANK YOU, MR. GOLUEKE.

5 THE WITNESS: THANK YOU.

6 THE COURT: YOU MAY STEP DOWN.

7 MS. TREBICKA: YOUR HONOR, GOOGLE WILL CALL

8 DR. CAITLIN SADOWSKI.

9 THE COURT: THANK YOU.

10 MS. SADOWSKI, DR. SADOWSKI, COME RIGHT ON UP HERE AND BE  
11 SEATED.

12 ACTUALLY, RAISE YOUR RIGHT HAND AND REMAIN STANDING. COME  
13 ON UP.

14 TOO MANY DIRECTIONS. I'M SORRY. THERE YOU GO.

15 THE CLERK: PLEASE RAISE YOUR RIGHT HAND.

16 **(DEFENDANT'S WITNESS, CAITLIN SADOWSKI, WAS SWORN.)**

17 THE WITNESS: I DO.

18 THE CLERK: THANK YOU. HAVE A SEAT, PLEASE.

19 THE COURT: PLEASE STATE YOUR FULL NAME.

20 THE WITNESS: MY NAME IS DR. CAITLIN SADOWSKI. DO  
21 YOU WANT ME TO SPELL IT?

22 THE COURT: I THINK WE'VE GOT IT. THANK YOU.

23 **DIRECT EXAMINATION**

24 BY MS. TREBICKA:

25 Q. DR. SADOWSKI, WHAT IS YOUR ROLE AT GOOGLE?

1 A. I LEAD THE CHROME DATA TEAM.

2 Q. AND WHAT DOES THE CHROME DATA TEAM DO?

3 A. SO WE'RE A CROSS-FUNCTIONAL TEAM CONSISTING OF ENGINEERS  
4 AND ANALYSTS. WE OWN ALL THE INFRASTRUCTURE FOR COLLECTING IN  
5 THE WILD METRICS ABOUT CHROME BROWSER USAGE, AND THEN WE ALSO  
6 HELP PEOPLE ANSWER QUESTIONS ABOUT CHROME BROWSER USAGE.

7 Q. AND DO YOU LEAD THAT TEAM?

8 A. YES, I LEAD THAT TEAM.

9 Q. HOW MANY PEOPLE REPORT TO YOU?

10 A. ABOUT 30.

11 Q. NOW, DOES -- DO YOU KNOW WHAT THE X-CLIENT DATA HEADER IS?

12 A. YES.

13 Q. AND HOW HAVE YOU BECOME AWARE OF THE X-CLIENT DATA HEADER?

14 A. THE X-CLIENT DATA HEADER IS SENT BY -- AS PART OF  
15 INFRASTRUCTURE OWNED BY MY TEAM IN ORDER TO CONVEY  
16 EXPERIMENTATION STATE.

17 Q. DO YOU KNOW WHETHER CHROME SENDS THE X-CLIENT DATA HEADER  
18 IN INCOGNITO MODE?

19 A. CHROME DOES NOT TYPICALLY SEND THE X-CLIENT DATA HEADER IN  
20 INCOGNITO MODE.

21 Q. WHY IS THAT?

22 A. BECAUSE USER PRIVACY IS IMPORTANT AND WE DON'T WANT TO  
23 HAVE ANY WAY TO BE TRACKING USERS BETWEEN INCOGNITO AND  
24 NON-INCOGNITO MODE.

25 SO EVEN THOUGH THERE'S NOT A LOT OF INFORMATION IN THE

1 X-CLIENT DATA HEADER, WE DON'T SEND IT FOR PRIVACY REASONS.

2 Q. NOW, DOES CHROME, OR YOUR TEAM WITHIN CHROME, USE THE  
3 ABSENCE OF THE X-CLIENT DATA HEADER TO DETECT INCOGNITO MODE?

4 A. WE DO NOT.

5 Q. DOES ANYBODY WITHIN CHROME USE THE ABSENCE OF THE X-CLIENT  
6 DATA HEADER TO DETECT INCOGNITO MODE?

7 A. WE DO NOT.

8 Q. WHY NOT?

9 A. BECAUSE IT'S NOT A RELIABLE INDICATOR OF WHETHER SOMEONE  
10 IS OR IS NOT IN INCOGNITO MODE.

11 Q. AS A CHROME ENGINEER AND THE LEADER OF THE CHROME METRICS  
12 TEAM, CAN YOU TELL US ALL THE REASONS WHY THE ABSENCE OF THE  
13 X-CLIENT DATA HEADER IS NOT A RELIABLE DETECTION TOOL FOR  
14 INCOGNITO BROWSING?

15 A. EVEN I CAN'T TELL YOU ALL THE REASONS, BUT I CAN TELL YOU  
16 SOME OF THE REASONS.

17 Q. THAT'S GOOD. LET'S -- JUST SO THE RECORD IS CLEAR, WHY  
18 DON'T WE TAKE IT ONE BY ONE. TELL ME THE FIRST REASON THAT YOU  
19 CAN THINK OF.

20 A. SO, FOR EXAMPLE, ON IOS, THE X-CLIENT DATA HEADER IS  
21 TYPICALLY NOT SENT, EXCEPT IN SOME KINDS OF SEARCHES.

22 Q. AND WHAT IS --

23 A. AND NAVIGATIONS.

24 Q. UNDERSTOOD. WHAT IS ANOTHER REASON THAT THE X-CLIENT DATA  
25 HEADER IS NOT SENT IN INCOGNITO MODE?

1 I'M SORRY. WHAT IS ANOTHER REASON THAT THE X-CLIENT DATA  
2 HEADER IS NOT SENT AND THE USER IS NOT IN INCOGNITO MODE?

3 A. ANOTHER EXAMPLE IS DURING A FIRST RUN OF CHROME, IT'S  
4 TYPICALLY NOT SENT, OR NOT SENT FOR I THINK MOST PLATFORMS.

5 SO FIRST RUN IS, LIKE, WHEN YOU HAVE JUST STARTED A NEW  
6 INSTALL OF CHROME.

7 Q. OKAY. CAN YOU THINK OF ANOTHER REASON?

8 A. ANOTHER EXAMPLE IS, FOR EXAMPLE, BUGS OR PROBLEMS. IT'S  
9 NOT SENT ANY TIME THAT IT'S EMPTY.

10 SO IF THERE'S A PROBLEM WITH GETTING THE EXPERIMENTATION  
11 STATE OR UNDERSTANDING THE EXPERIMENTATION STATE, IT'S NOT  
12 SENT.

13 AND IT'S NOT SENT IF IT'S EMPTY AND IS PUBLICLY AVAILABLE  
14 CHROMIUM SOURCE CODE.

15 SO, LIKE, FOR EXAMPLE, WE DISCOVERED RECENTLY THAT THERE  
16 WERE SOME USERS THAT HAD VERY OLD EXPERIMENTATION  
17 CONFIGURATIONS AND WERE IN A WEIRD STATE.

18 Q. ANY OTHER REASONS WHY THE X-CLIENT DATA HEADER MAY NOT BE  
19 SENT WHEN A USER IS NOT IN INCOGNITO MODE?

20 A. YEAH. SO IT'S ONLY SENT TO GOOGLE PROPERTIES, BUT IT'S  
21 NOT SENT IF THERE'S REDIRECTS.

22 Q. AND WHAT DO YOU MEAN BY "REDIRECTS"?

23 A. LIKE IF YOU HAD A, ANOTHER PAGE THAT THEN, LIKE, TOOK YOU  
24 TO A GOOGLE PAGE WITH, LIKE, TWO DIFFERENT REQUESTS, IT ONLY IS  
25 LOOKING AT THE MAIN PAGES AS A GOOGLE PROPERTY.

1 Q. AND WITHOUT EXPLAINING THE OTHER REASONS, ARE THERE OTHER  
2 REASONS THAT YOU KNOW OF THAT THE X-CLIENT DATA HEADER IS NOT  
3 SENT, BUT THE USER IS NOT IN INCOGNITO MODE?

4 A. THOSE ARE THE BIGGEST. BUT THE, THE WHEN IS THE  
5 EXPERIMENTATION STATE EMPTY, THAT COULD HAPPEN FOR A VARIETY OF  
6 REASONS.

7 Q. OKAY. SO DO YOU KNOW HOW MANY TIMES THIS PHENOMENA  
8 HAPPENS, WHICH IS THE X-CLIENT DATA HEADER IS NOT SENT AND,  
9 YET, THE USER IS NOT IN CHROME INCOGNITO?

10 A. THAT WOULD BE -- I DON'T KNOW -- I DON'T KNOW THE NUMBER  
11 OFF THE TOP OF MY HEAD, BUT IT IS NOT SMALL.

12 I MENTIONED IOS. MANY TIMES IN IOS, AND ALSO FIRST RUN,  
13 THERE ARE MANY USERS THAT ARE USING CHROME FOR THE FIRST TIME  
14 OR HAVE KIND OF REINSTALLED CHROME. I BELIEVE THERE'S  
15 UTILITIES ON MOBILE THAT ACTUALLY JUST LET YOU REINSTALL  
16 CHROME, AND SOME PEOPLE USE THEM ON A DAILY BASIS.

17 Q. WOULD YOU SAY THAT'S IN MILLIONS OF INSTANCES? I --

18 MR. MCGEE: OBJECTION. SPECULATION, YOUR HONOR.

19 THE COURT: I'LL ALLOW IT.

20 THE WITNESS: I WOULD CONSERVATIVELY SAY MILLIONS.

21 SO I WOULD EXPECT MORE THAN THAT.

22 BY MS. TREBICKA:

23 Q. IS THE PURPOSE OF THE X-CLIENT DATA HEADER TO MEASURE  
24 INCOGNITO TRAFFIC?

25 A. NO, THAT IS NOT THE PURPOSE OF THE X-CLIENT DATA HEADER.

1 Q. HOW DOES YOUR TEAM, THE UMA TEAM, MEASURE INCOGNITO  
2 STATISTICS?

3 A. SO MY TEAM WOULD REFER PEOPLE TO USE UMA IF THEY WANTED TO  
4 UNDERSTAND STATISTICS ABOUT INCOGNITO USAGE. UMA IS VERY  
5 PRIVACY PRESERVING, WHICH IS WHY IT'S THE DATA SET WE USE AND  
6 WE STILL TRACK METRICS EVEN IN INCOGNITO MODE.

7 Q. WHAT DOES UMA STAND FOR?

8 A. USER METRICS ANALYSIS.

9 Q. AND THAT IS THE TEAM THAT YOU LEAD; CORRECT?

10 A. YES.

11 Q. CAN UMA DATA BE USED TO IDENTIFY INDIVIDUAL USERS?

12 A. NO. SO UMA DATA IS KEYED BY A CLIENT ID, WHICH ROUGHLY  
13 CORRESPONDS TO A CHROME INSTALL. SO YOU COULD HAVE ONE USER,  
14 LIKE, FOR EXAMPLE, MYSELF, I HAVE TWO DIFFERENT VERSIONS OF  
15 CHROME RUNNING ON MY LAPTOP, A CANARY VERSION, LIKE AN EARLY  
16 VERSION THAT MIGHT BE BUGGY, AND THEN THE MAIN, NORMAL CHROME  
17 VERSION.

18 I ALSO HAVE A VERSION OF CHROME RUNNING ON MY PHONE, AND  
19 ALL OF THOSE WILL HAVE DIFFERENT ID'S ASSOCIATED WITH THE SAME  
20 PERSON, ME.

21 YOU COULD ALSO HAVE MULTIPLE PEOPLE USING THE SAME CHROME  
22 INSTALL AND HAVE THE SAME CLIENT ID ASSOCIATED WITH MULTIPLE  
23 PEOPLE.

24 Q. DOES GOOGLE JOIN THE UMA DATA WITH GOOGLE ACCOUNT  
25 INFORMATION?



1 A. NO.

2 Q. WHY NOT?

3 A. THERE ISN'T A WAY TO DIRECTLY JOIN UMA DATA WITH GOOGLE  
4 ACCOUNT INFORMATION. WE DO NOT HAVE A MAPPING FROM UMA CLIENT  
5 ID'S TO GOOGLE USER NAMES.

6 Q. YOU RECALL THAT YOU WERE DEPOSED IN THE BROWN VERSUS  
7 GOOGLE ACTION?

8 A. I DO RECALL.

9 Q. AND DO YOU RECALL THAT YOU PROVIDED TESTIMONY AS A  
10 CORPORATE WITNESS?

11 A. YES.

12 Q. AND YOU PREPARED FOR THAT TESTIMONY?

13 A. YES.

14 Q. DO YOU RECALL THE TOPICS GENERALLY THAT YOU WERE ASKED  
15 ABOUT?

16 A. I WAS ASKED ABOUT MANY TOPICS IN THE COURSE OF THE  
17 DEPOSITION, BUT THAT INCLUDED SOME QUESTIONS ABOUT UMA, AND  
18 ALSO ABOUT SEARCH LOGS IDENTIFIED FOR THIS PARTICULAR CASE.

19 Q. AND IN PARTICULAR, DID THE QUESTIONS REVOLVE AROUND  
20 CERTAIN BITS, FIELDS, FOUND IN THESE IDENTIFIED SEARCH LOGS?

21 A. YES. I WAS QUESTIONED ABOUT SPECIFIC FIELDS FOUND IN  
22 THESE IDENTIFIED SEARCH LOGS.

23 Q. IN YOUR UNDERSTANDING AS A CHROME ENGINEER, CAN THESE BITS  
24 FOUND IN THESE IDENTIFIED SEARCH LOGS BE MAPPED TO UMA DATA?

25 A. NO, THEY CANNOT.

1 MS. TREBICKA: THANK YOU, YOUR HONOR.

2 I HAVE NO FURTHER QUESTIONS.

3 THE COURT: THANK YOU.

4 CROSS EXAM?

5 **CROSS-EXAMINATION**

6 BY MR. MCGEE:

7 Q. DR. SADOWSKI, EARLIER YOU TESTIFIED THAT IOS TYPICALLY  
8 DOES NOT SEND THE X-CLIENT DATA HEADER; CORRECT? IOS TRAFFIC?

9 A. I DON'T RECALL MY EXACT WORDS. I BELIEVE IT IS SENT WHEN  
10 YOU DO AN OMNI BOX MEDIATED SEARCH OR NAVIGATION.

11 Q. BUT YOU CAN EXCLUDE IOS CHROME TRAFFIC WITH UTILIZING THE  
12 USER AGENT STRING; CORRECT?

13 A. I DON'T KNOW WHAT YOU MEAN BY "YOU CAN EXCLUDE." FROM  
14 WHERE?

15 Q. GOOGLE HAS SET ALL OF THE DATA THAT IS BEING SENT WITHOUT  
16 AN X-CLIENT DATA HEADER, THAT CAN BE SEGMENTED BY THE USE OF A  
17 USER AGENT STRING; CORRECT?

18 A. A USER AGENT STRING, I DON'T KNOW, FOR EXAMPLE, HOW OFTEN  
19 THAT'S CORRECT. YOU CAN USE IT TO PARTITION DATA.

20 BUT I DO KNOW IT'S ALSO EASILY SPOOFED AND THERE'S THINGS  
21 YOU CAN DOWNLOAD.

22 Q. HOW OFTEN IS IT EASILY SPOOFED? HOW OFTEN DO PEOPLE SPOOF  
23 A USER AGENT STRING?

24 A. I HAVE NO IDEA.

25 Q. OKAY. DOES GOOGLE TRACK HOW OFTEN PEOPLE SPOOF USER AGENT

1 STRINGS?

2 A. I HAVE NO IDEA.

3 Q. OKAY. SO THAT WOULD JUST BE PURE SPECULATION AS TO HOW  
4 OFTEN PEOPLE ARE SPOOFING USER AGENT STRINGS; CORRECT?

5 A. IT'S EASY TO SPOOF IS WHAT I SAID. I DID NOT MAKE ANY  
6 CLAIMS ABOUT HOW OFTEN PEOPLE SPOOF IT.

7 Q. OKAY. AND YOU SAID THERE WERE ALSO FIRST RUNS WHERE AN  
8 X-CLIENT DATA HEADER IS NOT SENT, CORRECT, WITH TRAFFIC?

9 A. YES, THAT'S ONE OTHER EXAMPLE.

10 Q. RIGHT.

11 A. BUT I WOULD LIKE TO MENTION THERE ARE MANY. I ONLY KNOW  
12 SOME. I FIND OUT ABOUT MORE AS THEY COME UP.

13 Q. YEAH.

14 A. SOME ARE, AS I MENTIONED, THIS BUG WITH OLDER --

15 Q. AND I ONLY WANT TO SPEAK ABOUT THE ONES THAT YOU KNOW.

16 BUT IT'S AFTER A FIRST RUN; CORRECT?

17 A. IT --

18 Q. IN OTHER WORDS, IF SOMEONE BROWSES AROUND THE INTERNET,  
19 CHROME QUICKLY STARTS SENDING AN X-CLIENT DATA HEADER; CORRECT?

20 A. I DON'T KNOW THE EXACT TIME IN BETWEEN.

21 Q. CAN YOU ESTIMATE IT?

22 A. NOT OFF THE TOP OF MY HEAD.

23 Q. IS IT TWO SEARCHES?

24 A. I DON'T WANT TO SPECULATE WITHOUT LOOKING AT THE SOURCE  
25 CODE.

1 Q. OKAY. BUT YOU'D HAVE TO LOOK AT SOURCE CODE TO FIGURE  
2 THAT OUT? IS THAT WHAT YOU'RE TELLING ME?

3 A. OR TALK TO SOMEONE OR DO SOME RESEARCH ABOUT LOOKING AT  
4 DOCUMENTATION.

5 BUT THE EXACT TIME, NO. SO IT'S DURING -- DURING KIND OF  
6 WHEN CHROME STARTS UP FOR THE FIRST TIME OR WHEN THAT, THAT  
7 INSTALL OF CHROME STARTS UP FOR THE FIRST TIME.

8 Q. DID YOU DO ANY OF THAT RESEARCH IN PREPARATION FOR YOUR  
9 TESTIMONY HERE TODAY?

10 A. I DID NOT --

11 Q. OKAY.

12 A. -- DO RESEARCH ABOUT THE EXACT LENGTH OF TIME THAT IS  
13 ELAPSED BETWEEN STARTING UP CHROME AND SENDING AN X-CLIENT DATA  
14 HEADER.

15 Q. OKAY. AND EARLIER IN YOUR TESTIMONY, YOU ALSO TESTIFIED  
16 THAT IT'S YOUR OPINION THAT YOU CANNOT JOIN UMA AND GOOGLE USER  
17 NAMES; CORRECT?

18 A. THAT IS CORRECT.

19 Q. AND WHY IS THAT?

20 A. BECAUSE UMA IS KEYED BY A RANDOM STRING CORRESPONDING TO A  
21 CHROME INSTALL. THERE IS NO USER NAME INFORMATION IN THE UMA  
22 DATA SET.

23 Q. SO THERE'S NO DIRECT LINK; CORRECT?

24 A. THAT IS CORRECT. THERE'S NO KEY THAT YOU CAN JOIN UMA  
25 WITH ANOTHER DATA SET THAT IS A USER, USER ID BASED DATA SET.

1 Q. BUT IN THIS LITIGATION, GOOGLE PRODUCED OUR PLAINTIFFS'  
2 UMA DATA; CORRECT?

3 A. I DO NOT KNOW EVERYTHING THAT GOOGLE PRODUCED IN THIS  
4 LITIGATION.

5 IF YOU HAVE A PARTICULAR MACHINE, YOU CAN FIND THE UMA ID  
6 FOR THAT MACHINE BECAUSE IT'S NOT A SECRET THING. YOU CAN LOOK  
7 UP YOUR, YOUR OWN UMA DATA. SO IF YOU ARE A PERSON AND YOU  
8 WANT TO KNOW, LIKE, YOUR OWN UMA CLIENT ID FOR A PARTICULAR  
9 INSTALL OF CHROME, YOU CAN LOOK THAT UP.

10 BUT YOU CAN'T DO THAT AT ANY KIND OF SCALE.

11 Q. RIGHT. BUT GOOGLE WOULDN'T PRODUCE NON-PLAINTIFF DATA,  
12 CORRECT, IN THIS LITIGATION?

13 A. I DO NOT KNOW THE FULL SET OF THINGS THAT GOOGLE HAS  
14 PRODUCED IN THIS LITIGATION. I AM SURE THAT THERE ARE ALL  
15 KINDS OF DOCUMENTS AND DATA SETS AND INFORMATION PRODUCED.

16 Q. SO I'D LIKE TO DRAW YOUR ATTENTION TO EXHIBIT 14 OF THE  
17 DEPOSITION THAT I TOOK OF YOU BACK ON MARCH 10TH.

18 A. IS THIS --

19 Q. IT'S GOING TO COME UP ON THE SCREEN.

20 A. OKAY.

21 MR. MCGEE: AND, YOUR HONOR, THIS IS EXHIBIT 7 TO  
22 MS. TREBICKA'S DECLARATION, WHICH IS FOUND AT DOCKET ENTRY  
23 528-7.

24 Q. NOW, DR. SADOWSKI, WE TALKED -- DO YOU RECALL SPEAKING  
25 WITH ME ABOUT THIS DOCUMENT?

1 THE COURT: MR. MCGEE, COULD YOU JUST IDENTIFY THE  
2 BATES NUMBER?

3 MR. MCGEE: YES, YOUR HONOR, MY APOLOGIES, IT'S  
4 GOOG-BRWN-00536949, AND IT'S THE SAME PAGE.

5 Q. DR. SADOWSKI, YOU RECALL SPEAKING WITH ME ABOUT THIS  
6 DOCUMENT AT YOUR DEPOSITION; CORRECT?

7 A. I BELIEVE SO. I DEFINITELY RECALL REVIEWING THIS  
8 DOCUMENT.

9 Q. AND QUENTIN FIARD IS AT THE TOP.  
10 DO YOU REMEMBER SPEAKING ABOUT QUENTIN FIARD?

11 A. I DO.

12 Q. AND YOU SAID THAT THIS DOCUMENT RELATES TO  
13 IS\_CHROME\_NON\_INCOGNITO BIT; CORRECT?

14 A. THIS DOCUMENT RELATES TO THE IS\_CHROME\_NON\_INCOGNITO MODE  
15 BINARY FIELD.

16 Q. RIGHT. BUT NOWHERE MENTIONED IN THIS DOCUMENT IS THAT  
17 ACTUAL REFERENCE; RIGHT?

18 A. THIS DOCUMENT PRECEDED IMPLEMENTATION. THIS IS A PROPOSAL  
19 DOCUMENT FOR SOMETHING THEY WANTED TO DO.

20 THIS DOCUMENT IS LINKED FROM THE PARTICULAR FIELD  
21 DEFINITION FOR THAT FIELD.

22 Q. RIGHT. IT WAS THE PROTO FIELD; RIGHT?

23 A. ANYTHING IS A BINARY PROTO FIELD.

24 Q. RIGHT. AND YOU SEARCHED ACROSS THE MULTI-BILLION LINE  
25 GOOGLE CODE, THE REPOSITORY -- I THINK THAT'S WHAT YOU

1 TESTIFIED TO AT YOUR DEPOSITION -- TO FIND THAT PROTO COMMENT;  
2 CORRECT?

3 A. I -- IF -- I LOOKED FOR A COUPLE OTHER SEARCH STRINGS THAT  
4 WE TALKED ABOUT AT MY DEPOSITION.

5 FOR THIS PARTICULAR PROTO FIELD, IF YOU LOOK FOR  
6 IS\_CHROME\_NON\_INCOGNITO MODE, THERE IS ONE PARTICULAR PROTO  
7 FIELD.

8 Q. YOU SAID THIS DOCUMENT PREDATES IMPLEMENTATION; CORRECT?

9 A. YES. THIS IS A PROPOSAL DOCUMENT THAT WAS USED TO GET  
10 GOOGLE TO DO THE IMPLEMENTATION.

11 Q. BUT, AGAIN, NOWHERE IN THIS DOCUMENT DOES IT ACTUALLY  
12 MENTION THE UNDERSCORE BIT, CORRECT? THE IS UNDERSCORE CHROME  
13 UNDERSCORE NON UNDERSCORE INCOGNITO? YOU HAD TO DO THAT ON  
14 YOUR BACK END WITH THE SOURCE CODE TO ACTUALLY IDENTIFY THIS  
15 DOCUMENT AS RELATING TO THAT BIT; CORRECT?

16 A. THE REASONS I KNOW THIS DOCUMENT IS RELATED TO THAT BIT,  
17 ONE IS FROM TALKING TO QUENTIN FIARD HIMSELF, WHO IS THE PERSON  
18 THAT WROTE THIS DOCUMENT; TWO IS FROM THE FACT THAT THE  
19 DEFINITION OF THE PROTO FIELD ACTUALLY DIRECTLY LINKS OUT TO  
20 THIS DOCUMENT.

21 Q. RIGHT. AND EVERYTHING YOU KNOW ABOUT THESE BITS IS BASED  
22 ON YOUR DISCUSSIONS WITH QUENTIN FIARD; CORRECT?

23 A. THAT IS NOT CORRECT. I SUBSEQUENTLY READ THE SOURCE CODE  
24 THAT IS USED TO ACTUALLY WRITE THESE BITS.

25 Q. OKAY. ANYTHING ELSE?

1 A. I ALSO TALKED WITH TWO MEMBERS OF THE CURRENT TEAM THAT  
2 QUENTIN WAS PREVIOUSLY ON.

3 Q. OKAY. AND IF I CAN BRING UP EXHIBIT 90.

4 AND, JUDGE, THAT'S GOING TO BE DOCKET ENTRY 528-7, AGAIN,  
5 TO MS. TREBICKA'S DECLARATION. THAT'S EXHIBIT 15, AND IT BEARS  
6 BATES GOOG-BRWN-176433.

7 AND THERE'S A PORTION OF THIS DOCUMENT HERE WHERE  
8 MR. MARK PEARSON SAYS "FYI: FOR CHROME USERS, IT'S TECHNICALLY  
9 POSSIBLE ON THE SEARCH SIDE TO DISTINGUISH BETWEEN INCOGNITO  
10 AND NON-INCOGNITO SESSIONS ENTIRELY INDEPENDENTLY FROM THE  
11 COOKIE STATE."

12 DO YOU SEE THAT?

13 A. YES.

14 Q. AND A LITTLE FARTHER DOWN IN THE DOCUMENT, "REGARDING  
15 PEOPLE WHO DO THIS, I SUGGEST SEARCHING FOR 'X-CLIENT-DATA' IN  
16 THE INTERNAL CODE SEARCH TOOL AND LOOKING FOR PAGES THAT  
17 INCLUDE THE MENTION OF INCOGNITO."

18 DO YOU SEE THAT?

19 MR. SCHAPIRO: OBJECTION. MISSTATES THE DOCUMENT.

20 MR. MCGEE: SORRY. WHICH --

21 MR. SCHAPIRO: YOU DIDN'T READ IT CORRECTLY.

22 BY MR. MCGEE:

23 Q. OKAY. WELL, DR. SADOWSKI, YOU CAN READ THE DOCUMENT. I  
24 DON'T MEAN TO MISSTATE IT.

25 BUT THE PART THAT SAID 2 PERIOD, REGARDING, CAN YOU READ



1 THAT FIRST SENTENCE FOR ME THAT'S HIGHLIGHTED?

2 A. "REGARDING PEOPLE WHO DO THIS, I SUGGEST SEARCHING FOR  
3 'X-CLIENT-DATA' IN INTERNAL CODE SEARCH AND LOOKING FOR PAGES  
4 THAT INCLUDED MENTION OF INCOGNITO."

5 Q. IS THAT THE SAME CODE SEARCH TOOL THAT YOU USED TO PREPARE  
6 FOR YOUR 30(B)(6) DEPOSITION IN THIS CASE?

7 A. CODE SEARCH IS A, BASICALLY LIKE GOOGLE SEARCH, BUT FOR  
8 CODE. YOU CAN SEARCH FOR ALL KINDS OF THINGS AND GET A VARIETY  
9 OF RESULTS. SO IT IS --

10 Q. AND THAT'S HOW YOU SEARCHED FOR THE INCOGNITO DETECTION  
11 BITS THAT WERE OUTLINED ON THE 30(B)(6) DEPOSITION NOTICES;  
12 CORRECT?

13 A. YEAH. IF THERE'S A PARTICULAR STRING THAT I AM TRYING TO  
14 FIND IN CODE, I WOULD USE CODE SEARCH TO SEARCH FOR IT.

15 OR IF THERE'S A PARTICULAR FILE I'M TRYING TO ACCESS, I  
16 WOULD USE CODE SEARCH TO SEARCH FOR IT.

17 IT'S A VERY COMMONLY USED TOOL BY GOOGLE ENGINEERS IN THE  
18 DAILY COURSE OF OUR JOBS.

19 Q. SO TO PREPARE FOR THAT DEPOSITION, DID YOU SEARCH FOR THE  
20 X-CLIENT DATA IN THE CODE SEARCH TOOL AND LOOK FOR ANYTHING  
21 THAT MENTIONED INCOGNITO?

22 A. I DON'T THINK I'VE GONE THROUGH EVERY MENTION OF X-CLIENT  
23 DATA HEADER, OR X-CLIENT DATA IN CODE SEARCH.

24 Q. ANYONE ON YOUR TEAM DONE THAT?

25 THE COURT: LAST QUESTION.

1 THE WITNESS: MARK PEARSON IS ON MY TEAM.

2 I DON'T KNOW IF ANYONE ON MY TEAM HAS EVER SEARCHED FOR  
3 X-CLIENT DATA HEADER AND INCOGNITO BEYOND THIS DOCUMENT.

4 AS A SIDE NOTE, I TALKED TO MARK ABOUT THIS PARTICULAR  
5 DOCUMENT, AND HE ALSO CLARIFIED THAT HE -- THAT HIS STATEMENTS  
6 THAT YOU CAN DISTINGUISH BETWEEN INCOGNITO AND NOT INCOGNITO  
7 SESSIONS USING X-CLIENT DATA HEADER IS INCORRECT.

8 MR. MCGEE: YOUR HONOR, I'D MOVE TO STRIKE THAT LAST  
9 PORTION AS HEARSAY AND NONRESPONSIVE.

10 THE COURT: STRICKEN.

11 MR. MCGEE: THANK YOU.

12 THE COURT: OKAY.

13 MR. MCGEE: AND JUST FOR THE RECORD, JUDGE, I BELIEVE  
14 YOU SAID YOU SUSTAINED THAT OBJECTION.

15 THE COURT: I SUSTAINED THAT OBJECTION.

16 THANK YOU. THAT'S ALL, DR. SADOWSKI. YOU MAY STEP DOWN.

17 MR. BOIES: YOUR HONOR, JUST AS A HOUSEKEEPING  
18 MATTER, I THINK WE FAILED TO OFFER INTO EVIDENCE EXHIBITS 85  
19 AND 103, BUT WE WOULD OFFER THEM AT THIS TIME.

20 THE COURT: I'M SORRY, MR. BOIES. YOU'RE GOING TO  
21 HAVE TO COME UP TO THE MICROPHONE.

22 MR. BOIES: I APOLOGIZE, YOUR HONOR.

23 I THINK JUST AS A HOUSEKEEPING MATTER, I DON'T THINK WE  
24 OFFERED EXHIBITS 85 AND 103, BOTH OF WHICH WE USED, BUT WE  
25 DIDN'T OFFER.